Influence of immediate predation risk by lions on the vigilance of prey of different body size

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Mots-clés	antipredatory behavior [13], impala [14], intense vigilance [15], Panthera leo [16], zebra [17]
Résumé en anglais	The effects on vigilance behavior of environmental cues that affect perceived risk of predation have been widely measured in gregarious herbivores. How extrinsic (e.g., predator activity within certain habitats) and intrinsic (e.g., within-group competition) cues interact depends on the biology of the prey species. However, very little is known about the impact of the actual presence of the predator in the vicinity on fine scale prey vigilance behavior. For this study, we monitored the vigilance of plains zebra (Equus quagga) and impala (Aepyceros melampus) in and around Hwange National Park, Zimbabwe. We assessed how the presence of radio-collared lions (Panthera leo) affected the vigilance of their prey. To evaluate the factors affecting vigilance behavior, we measured routine and intense vigilance. Routine vigilance can be conducted while chewing, although during intense vigilance chewing is halted and thus imposes foraging costs as food processing is delayed. As the most acute form of vigilance, we predicted that the presence of lions would lead to an increase in intense vigilance in both species. We found this to be the case for zebra, a key prey species for lions, while impala adjusted their intense vigilance to risk cues less specific to the presence of lions. Potential predation risk posed by lions in the immediate vicinity differs not only between species but also for a given species in different contexts. Our results also reveal how other environmental risk indicators influence the structure of vigilance behavior of large prey species in a manner that reflects their respective ecologies.

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